



Socio-Economic Impacts of Recently Constructed Arterial Roads on Commercial Property Performance on Ada George Road, Port Harcourt, Nigeria

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Abstract

This study examined the changes in occupancy and vacancy rates of commercial properties along Ada-George Road, Port Harcourt, and assessed the broader socio-economic effects of the road improvement (construction/dualization) on businesses and property stakeholders within the corridor. The study was motivated by the need to understand the extent to which road infrastructure investment influences commercial real estate performance in a rapidly urbanizing corridor. Data were obtained through a structured questionnaire administered to 181 respondents comprising property owners, tenants, and business operators along the corridor and were analyzed using descriptive statistics (frequencies, percentages, and mean scores on a 5-point Likert scale). Findings revealed that 76.2% of respondents perceived high vacancy rates before the road improvement, compared with 82.9% who reported improved occupancy conditions afterward. On the perceived socio-economic effects of the road improvement, all seven measured indicators recorded mean scores above the 3.0 criterion mean (grand mean = 4.07), with respondents most strongly agreeing that the road improvement increased rental values (mean = 4.22) and market/resale values (mean = 4.12) of commercial properties. These perceptions were corroborated by quantitative market data, which showed that rental along the corridor rose substantially between the pre-improvement period (2017–2020) and the post-improvement period (2025–2026), with rental values across shop, office, and purpose-built plaza spaces increasing by 114–300%. The study concludes that the Ada-George Road improvement project exerted a significant, positive, and multi-dimensional effect on commercial property performance, reducing vacancy, boosting occupancy, and substantially increasing property values along the corridor. It is recommended that similar road infrastructure investments be extended to other underperforming commercial corridors, complemented by measures to regulate rent escalation and support existing businesses, in order to sustain and broaden the benefits of such interventions.

Keywords: Road improvement, commercial property, vacancy rate, occupancy, rental value,

1. Introduction

Transportation infrastructure is a critical determinant of urban growth, economic development, and real estate market performance. Globally, arterial roads facilitate mobility, reduce transportation costs, promote accessibility, and stimulate investment within urban centres (Rodrigue, 2020). In rapidly urbanizing cities, urban road infrastructure is widely recognized as a primary driver of land and property value change. As cities expand, new or improved arterial roads alter accessibility patterns, redirect traffic and pedestrian flows, and reshape the commercial attractiveness of the corridors they traverse. In classical urban land economics, *Alonso's* (1964) bid-rent framework and *Hansen's* (1959) accessibility model demonstrate that locations with superior access to markets, customers, and transport networks command higher land rents than less accessible areas. *Rosen's* (1974) hedonic price theory further provides an analytical basis for decomposing property value into the implicit prices

of its constituent attributes, including proximity to and quality of road infrastructure. Collectively, these theories suggest that measurable improvements in road infrastructure should result in corresponding changes in the rental and occupancy performance of commercial properties along affected corridors.

Empirical evidence from Nigeria and other developing economies generally supports these theoretical expectations, though the magnitude and direction of impact vary by location and study design. In Lagos State, *Abidola et al.* (2025) surveyed 473 commercial property owners, tenants, and estate agents across nine road corridors in Ojo Local Government Area, finding that road quality was the strongest predictor of commercial property performance. Properties near arterial roads and public transport corridors commanded significantly higher rental values than those located further away. Similarly, *Alexander and Okpakam* (2024) reviewed evidence from Ghana and Nigeria, concluding that well-planned road

improvements typically enhance property values by improving accessibility and connectivity, although negative externalities such as traffic congestion and noise may offset some gains. In Rivers State, Adiele and Kakulu (2022) examined the effects of infrastructure development on land values in Peter Odili Road, Rukpokwu, and Igbo Etche in Greater Port Harcourt City, finding that neighborhoods with better road access and basic infrastructure experienced substantially higher land values and rental increases than comparable areas lacking such infrastructure.

In addition to influencing property values, arterial road construction has broader socio-economic implications for commercial districts. Improved accessibility can attract new businesses and increase patronage. However, it may also lead to land-use conversion, speculative acquisition of roadside plots, displacement of low-income traders due to rising rents, and disruption of established commercial activities during construction (Alexander & Okpakam, 2024).

Port Harcourt, the capital of Rivers State, has experienced significant arterial road development over the past two decades, including the dualisation and expansion of several major corridors under successive state administrations. Ada George Road is among these corridors. Initially developed in the early 1990s, the road was subsequently expanded and dualised, becoming one of the busiest commercial arteries in the Obio/Akpor Local Government Area. It now hosts banks, showrooms, eateries, retail outlets, and mixed-use commercial developments. Recently, the junction connecting Ada George Road to the Mgbuoba/Ozuoba axis was upgraded with a flyover, commissioned in 2023, to ease congestion and improve traffic flow along the corridor (Julius Berger Nigeria Plc, 2023). Anecdotal reports from property practitioners and residents indicate that these interventions have coincided with rising rental values, changing occupancy patterns, and shifts in the mix of commercial activities along the road. However, the extent, direction, and distribution of these socio-economic effects have not been systematically documented for Ada George Road.

Against this background, the present study aims to examine the socio-economic impacts of recent arterial road improvements on the rental and occupancy performance of commercial properties along Ada George Road, Port Harcourt. The goal is to generate evidence to inform property investment decisions, valuation practices, and urban infrastructure planning in the metropolis. The specific objectives are to:

- i. Evaluate changes in occupancy and vacancy rates of commercial properties along the corridor following the road improvement.
- ii. Identify the socio-economic effects of the road improvement on businesses and property stakeholders along the corridor.
- iii. Assess changes in rental values of commercial properties along the corridor attributable to the road improvement.

2.0 Study Area

Ada George Road is a major arterial route situated in the Obio/Akpor Local Government Area of the Port Harcourt metropolis, Rivers State, Nigeria. Named after Colonel Rufus Ada-George, a former military administrator of Rivers State whose administration (1992–1994) initiated the area's development, the road was later expanded and dualised to connect with the Rumuokwuta–Mgbuoba–Ozuoba–Choba corridor. Over time, Ada George Road has developed into one of the most commercially active corridors in the metropolis, accommodating banking halls, supermarkets, showrooms, hotels, eateries, and a dense concentration of retail and service establishments. In recent years, the corridor has undergone additional infrastructural improvements, notably the construction of the Mgbuoba/Ozuoba–Ada George Road junction flyover. This dual-carriageway structure, approximately 222 metres in length, includes service lanes, street lighting, and enhanced drainage, and was commissioned in 2023 to alleviate congestion at one of the corridor's busiest intersections (Julius Berger Nigeria Plc, 2023). These developments are part of a broader trend of arterial road investment in Port Harcourt, exemplified by the ongoing Port Harcourt Ring Road project, and demonstrate the state government's sustained focus on road-based urban development. The area's commercial density, recent infrastructure investments, and the presence of accessible property stakeholders position Ada George Road as a suitable and representative case for analyzing the socio-economic impacts of arterial road development on commercial property performance in Port Harcourt.

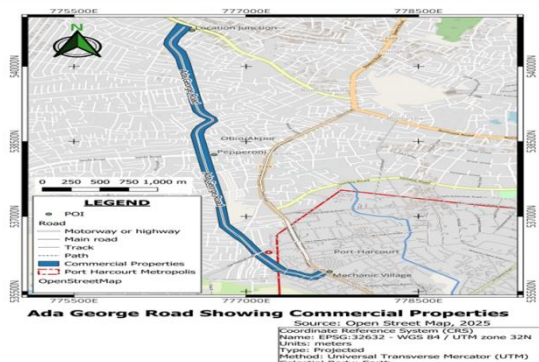


Fig. 1.0: Map of Ada George Road
Source: URP GIS Lab, Rivers State University (2026)

3.0 Literature Review

3.1 Conceptual Review

3.1.1 Concept of Arterial Roads

An arterial road is a high-capacity urban roadway primarily designed to channel traffic from collector roads to freeways or expressways, and to facilitate the movement of large volumes of through-traffic between city districts, in contrast to local access roads, which mainly provide direct access to adjacent properties (Alexander & Okpakam, 2024). Arterial roads are generally characterized by higher design speeds, multiple lanes, restricted direct property access, and a prioritization of movement efficiency over land access. In Nigerian cities, arterial roads such as Ada George Road in Port Harcourt, as

well as similar corridors in Lagos and Abuja, have historically functioned as commercial spines, attracting retail, banking, and service establishments due to the significant traffic volumes and visibility they offer (Oni, 2013).

3.1.2 Concept of Commercial Property

Commercial property is defined as real estate primarily held or utilized for generating trading or business income, rather than for owner-occupied residential purposes. This category encompasses shops, offices, showrooms, banking halls, shopping complexes, and similar premises leased or occupied for business activities (Iroham et al., 2013). Commercial property differs from residential and industrial property due to its income-generating function, heightened sensitivity to locational factors such as accessibility and visibility, and stronger association with macroeconomic variables including inflation, interest rates, and economic growth (Udoekam & Nuhu, 2014).

3.1.3 Concept of Rental Value and Rental Performance

Rental value refers to the periodic payment that a tenant is willing and able to pay for the use and occupation of a property, typically stated on an annual basis within the Nigerian property market. The concept of rental performance expands upon rental value by capturing trends and growth in rental values over time, which are shaped by locational, physical, economic, and legal factors (Udoekam & Nuhu, 2014; Adegoke, 2014). Empirical studies in Nigeria have consistently identified locational attributes, especially proximity to major road networks and the central business district, as well as physical facilities such as water and electricity supply, as primary determinants of commercial rental performance (Udoekam et al., 2014).

3.1.4 Concept of Occupancy and Vacancy Rate

The occupancy rate refers to the proportion of lettable commercial floor space that is leased and actively used at a specific point in time. Conversely, the vacancy rate represents the share of unlet or unoccupied space. In real estate literature, vacancy rate is widely recognized as both a determinant and an indicator of commercial property performance. Elevated vacancy rates indicate weak demand relative to supply and generally exert downward pressure on rental growth, whereas declining vacancy rates in conjunction with rising demand are associated with rental growth (Udoekam & Nuhu, 2014). Within the Nigerian context, vacancy rate has been identified as a major determinant of office rental performance, ranking second only to macroeconomic growth in certain markets (Udoekam & Nuhu, 2014).

3.2 Theoretical Framework

This research is grounded in two complementary theories: bid-rent theory and accessibility theory. Each offers a distinct yet related explanation for the influence of road infrastructure on commercial property performance.

3.3.1 Bid-Rent Theory

Bid-rent theory, developed by Alonso (1964), posits that various land uses compete for locations based on accessibility. The rent a land use is willing to pay declines with increasing

distance from the point of maximum accessibility, typically the central business district. Commercial uses, which depend on high foot traffic and convenient customer access, are theorized to have the steepest bid-rent curves and therefore outbid residential and other uses for the most accessible sites. In the context of arterial road improvement, bid-rent theory predicts that a road upgrade that significantly enhances accessibility along a corridor will increase commercial users' willingness to pay for space, resulting in higher achievable rents compared to less accessible locations.

3.3.2 Accessibility Theory

Accessibility theory, associated with Hansen (1959), defines accessibility as the ease with which a location can be reached from other locations, considering both the transport network and the spatial distribution of opportunities. Hansen's model provides an analytical framework for understanding road infrastructure investment as a direct contributor to locational value. An arterial road improvement that reduces travel time, alleviates congestion, or creates new connections increases the accessibility index of adjacent properties. This enhancement subsequently increases their attractiveness to commercial occupiers and improves rental and occupancy performance.

An integrated framework that combines bid-rent and accessibility theory underpins this research. Together, these theories provide the conceptual foundation for anticipating a positive relationship between the recent road improvement along Ada George Road and the rental and occupancy performance of commercial properties along the corridor.

3.4 Empirical Review

The relationship between road and transport infrastructure and commercial property values is well established in the international literature. Seo et al. (2019) analyzed the effects of proximity to highway and light rail infrastructure on commercial property values in Phoenix, Arizona, using a hedonic distance-decay model. Their findings indicate that accessibility benefits are concentrated near highway exits and rail stations, while negative externalities such as noise and severance are most pronounced immediately adjacent to the infrastructure, with both effects diminishing as distance increases. Lee and Ke (2013) investigated the impact of longitudinal changes in accessibility on commercial retail property values and demonstrated that improvements in accessibility over time are associated with measurable increases in commercial rental performance. This supports the theoretical expectation that changes in accessibility, rather than static accessibility levels, drive value changes. Collectively, these studies demonstrate that the relationship between road infrastructure and commercial property performance is not uniformly positive across all distances or property types, but is instead determined by the interplay of positive accessibility effects and negative proximity externalities.

Alexander and Okpakam (2024) conducted a literature review on road transport infrastructure and property values in Ghana and Nigeria, concluding that well-planned road improvements generally enhance property values by increasing accessibility

and connectivity. However, this positive relationship may be offset by increased traffic congestion and noise levels in the immediate vicinity of major roads. This finding is particularly relevant to the present study, as it highlights the need to avoid assuming a uniformly positive relationship between the Ada George Road improvement and commercial property performance along its entire length. Instead, the net effect is likely to vary by specific location along the corridor, especially around high-traffic nodes such as the Mgbuoba/Ozuoba junction.

Studies from Lagos State provide the most directly comparable Nigerian evidence. Abidola et al. (2025) surveyed 473 commercial property owners, tenants, and estate agents across nine road corridors in Ojo Local Government Area, finding that road quality was the strongest predictor of commercial property performance. Their regression model explained approximately 70 percent of the variation in rental performance; properties within 100 metres of arterial roads achieved rental premiums of about 25 percent, while proximity to bus rapid transit corridors yielded premiums ranging from 30 to 68 percent. Oni (2013) analyzed the arterial road network in Ikeja, Lagos State, decomposing road network characteristics into accessibility, connectivity, and traffic density variables. The study found that accessibility, along with demand and supply conditions, had a statistically significant relationship with commercial property values, enabling the development of predictive models for property developers. These Lagos-based studies consistently identify road-related accessibility as one of the most robust predictors of commercial property performance in Nigeria, although both studies note that the strength of this relationship varies across specific corridors within the same metropolis.

Beyond Lagos, several studies have investigated rental performance and its determinants in other Nigerian commercial property markets, offering comparative context even when road infrastructure was not the primary focus. Udoekanem, Ighalo, and Nuhu (2014) found that real gross domestic product growth and vacancy rates jointly accounted for a substantial proportion of the variation in office rents in Minna, highlighting the influence of macroeconomic conditions and market-specific supply factors, alongside locational attributes. Iroham, Oluwunmi, Simon, and Akerele (2013) observed in Akure that converted office spaces commanded higher rents than purpose-built alternatives, demonstrating that building type and history of use, in addition to location, affect achievable rents. Adegoke (2014) identified the key factors determining rental value of commercial properties in Osogbo, reinforcing the broader Nigerian finding that locational and infrastructural attributes, particularly road access, consistently rank among the most important determinants of rent across regional property markets. Collectively, these studies indicate that while the relative importance of determinants varies by city and market maturity, road access and accessibility are prominent factors in virtually all Nigerian commercial property markets studied.

Evidence specific to Rivers State is comparatively limited but aligns with the broader Nigerian literature. Ahiakwo et al.

(2026) investigated the influence of road design features on commercial property values along Peter Odili Road, a major commercial corridor in Port Harcourt, using a mixed-methods approach with 140 questionnaire respondents and 10 interviewees. The study found that road design features were positively associated with commercial property values (mean scores 3.50–3.97), with accessibility, traffic flow efficiency, and service roads identified as the most influential factors. The authors concluded that commercial property value gains are linked to improved connectivity and circulation, and that appreciation is most likely where accessibility-focused road design is combined with effective access management, drainage, and land-use coordination, consistent with hedonic valuation theory. Adiele and Kakulu (2022) examined the effects of infrastructure and property development on surrounding land values in three neighborhoods of Greater Port Harcourt City—Peter Odili Road, Rukpokwu, and Igbo Etche—using a mixed-methods approach. Their findings indicate that neighborhoods with better access roads and basic infrastructure, particularly Peter Odili Road and SARS Road in Rukpokwu, experienced significantly higher land values and rental booms than Igbo Etche, which lacked comparable infrastructure. The study concluded that the availability of infrastructure was a key driver of this disparity. While this research confirms the general direction of the infrastructure–property value relationship in Port Harcourt, it focused on land values across distinct neighborhoods rather than the rental and occupancy performance of commercial properties along a single arterial corridor before and after a specific road improvement, which is the gap addressed by the present study.

Deeyah et al. (2019) investigated the impact of locational infrastructural facilities on residential property values in Bori, Rivers State. Employing a survey design, data were collected from 274 households across six residential neighborhoods. The study assessed the availability of infrastructure such as roads, drainage, water supply, schools, parking spaces, and security facilities, and compared these with residential rental values. The findings revealed significant variations in both infrastructural provision and rental values across neighborhoods. Areas with better infrastructure, including Hospital Road, Poly Road, Prince Igbara Street, and Faith Way, recorded higher rental values than Kaani Road and Court Road. Pearson correlation analysis indicated a strong positive relationship ($r = 0.914$) between infrastructural facilities and rental values. The study concluded that adequate infrastructure significantly enhances residential property values and recommended increased infrastructural development in underserved areas to stimulate property market growth.

Ihuah and Benebo (2014) examined the effect of infrastructural facilities on property rental values and urban development. The study aimed to determine how infrastructure such as road networks, drainage systems, and potable water supply influence property demand and economic activities. Using a descriptive survey methodology that included property assessment and stakeholder interviews

in selected urban areas, the researchers found that adequate infrastructural provision significantly improved property values and promoted effective economic activities. The study recommended that government and urban development agencies prioritize the provision of essential infrastructure in both urban and rural areas, concluding that infrastructural facilities are vital determinants of real property values and socioeconomic development.

The reviewed literature demonstrates, with reasonable consistency across Lagos, other Nigerian cities, Ghana, and international contexts, that road infrastructure and accessibility are significant determinants of commercial property rental and occupancy performance, grounded in established bid-rent, and accessibility theory. However, three gaps remain. First, most Nigerian empirical studies on this relationship, including the most methodologically rigorous, such as Abidola et al. (2025) and Oni (2013), are concentrated in Lagos State, leaving the applicability of these findings to Port Harcourt and the wider Niger Delta under-explored. Second, the only Rivers State study identified, Ahiakwo et al. (2026), focused on road design features along Peter Odili Road, while Adiele and Kakulu (2022) examined land values across multiple neighborhoods rather than the rental and occupancy performance of commercial properties along a single, clearly defined arterial corridor before and after a specific road improvement. Third, none of the reviewed studies have examined Ada George Road specifically, despite its prominence as one of the busiest and most commercially significant corridors in Port Harcourt and its recent infrastructural upgrade. The present study addresses these gaps by focusing on the rental and occupancy performance of commercial properties along Ada George Road, before and after its recent road improvement, within a single, geographically bounded corridor in Port Harcourt.

4.0 Methodology

A quantitative research design was employed. The study area included two recently constructed arterial roads in Port Harcourt Metropolis: Illaobuchi Road and Ada-George Road. The target population comprised Estate Surveyors and Valuers, property owners, business operators, and residents with substantial knowledge of commercial property activities within the study area. From a total population of 340 respondents, a sample size of 181 was determined using the Krejcie and Morgan sample size determination technique. Primary data were collected using a structured questionnaire, which included sections on socio-demographic characteristics, socio-economic impacts, commercial property values, business activities, challenges related to arterial road development, and strategies for sustainable urban growth.

Primary data were collected using a structured questionnaire divided into five sections:

Section A: Assessment of changes in occupancy and vacancy rates of commercial properties along the corridor since the road improvement, as well as the influence of arterial roads on commercial property values.

Section B: Socio-economic effects of the road improvement on businesses and property stakeholders along the corridor.

Section C: Assessment of changes in rental values of commercial properties along the corridor attributable to the road improvement.

The questionnaire utilized Likert-scale items (1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High) to quantify respondents' perceptions and experiences. Data analysis included descriptive statistics such as frequencies, percentages, and mean scores. Inferential statistics, including correlation analysis, were used to examine the relationship between arterial road proximity and commercial property values. All statistical analyses were conducted using SPSS software.

5.0 Results Analysis and Discussion

This section presents, analyzes, and interprets data obtained from the field survey conducted for this study. The data are presented using frequency tables, percentages, and descriptive statistics, consistent with the study's objectives and research questions. The section is organized into themes that correspond to the three sections of the research questionnaire, followed by hypothesis testing and a discussion of the findings.

5.1 Property Vacancy Rate Before the Road Improvement

Table 1: Property Vacancy Rate Before the Road Improvement

Option	Frequency	Percentage
Yes	138	76.2%
No	34	18.8%
Not Sure	09	5.0%
Total	181	100%

Source: Field Survey, 2026

Table 1 presents the responses of 181 participants regarding vacancy rates in commercial properties along Ada-George Road prior to the road improvement project. Of these, 138 respondents (76.2%) indicated that vacancy rates were high before the improvement, while 34 respondents (18.8%) disagreed, suggesting that vacancy was not a significant issue at that time. An additional 9 respondents (5.0%) were either undecided or lacked sufficient information to provide a definitive response.

These data provide strong support for the hypothesis that road infrastructure quality is directly related to commercial property occupancy. This finding offers an empirical foundation for the broader argument that the Ada-George Road improvement project would likely increase occupancy and reduce vacancy rates. This proposition is further examined using follow-up data on vacancy rates after the road improvement, which is presented in the subsequent section.

5.2 Property Vacancy Rate After the Road Improvement

Table 2: Property Vacancy Rate After the Road Improvement

Option	Frequency	Percentage
Yes	150	82.9%
No	11	6.1%
Not Sure	20	11.0%
Total	181	100%

Source: Field Survey, 2026

Table 2 presents the responses of 181 participants regarding changes in vacancy rates for commercial properties along Ada-George Road following the road improvement project. Of these, 150 respondents (82.9%) reported a reduction in vacancy rates, suggesting increased occupancy. In contrast, 11 respondents (6.1%) indicated no noticeable change or continued vacancy, while 20 respondents (11.0%) were uncertain about any change in vacancy status after the intervention.

Table 3: Comparative Summary of Responses Before and After the Road Improvement

Response	Before (%)	After (%)	Change
Yes (High Vacancy)	76.2%	82.9%	+6.7
No	18.8%	6.1%	-12.7
Not Sure	5.0%	11.0%	+6.0

Source: Field Survey, 2026

The comparative analysis offers robust empirical evidence that the Ada-George Road improvement project positively affected commercial property performance by reducing vacancy and increasing occupancy rates. This finding is consistent with established urban and real estate economics literature, which asserts that infrastructure investment, particularly improvements in road accessibility, is a key determinant of commercial property value, demand, and occupancy.

5.3 Socio-Economic Effects of the Road Improvement on Businesses and Property Stakeholders Along Ada-George Road

Table 4: Perceived Socio-Economic Effects of the Road Improvement

Statements	SD (1)	D (2)	N (3)	A (4)	SA (5)	Total	Mean	Decision
The road improvement has increased the rental value of commercial properties along the corridor.	5	8	18	65	85	181	4.22	Agreed
The road improvement has increased the market/resale value of commercial properties along the corridor.	6	9	21	69	76	181	4.12	Agreed
The road improvement has increased customer patronage to my business.	7	10	22	70	72	181	4.10	Agreed
The road improvement has attracted new categories of businesses to the corridor.	7	10	24	68	72	181	4.08	Agreed
The road improvement has reduced vacancy/void periods for commercial properties along the corridor.	8	11	23	69	70	181	4.05	Agreed
The road improvement has increased employment opportunities for residents along the corridor.	9	14	26	65	67	181	3.98	Agreed
The road improvement has improved the overall commercial image/status of the corridor.	9	14	27	67	64	181	3.95	Agreed
Grand Mean							4.07	Agreed

Source: Field Survey, 2026

Decision Rule: Mean ≥ 3.0 = Agreed; Mean < 3.0 = Disagreed (based on a 5-point Likert scale, with 3.0 as the midpoint/criterion mean)

The table above summarizes respondents' perceptions of the socio-economic effects of the road improvement on

businesses and property stakeholders along Ada-George Road, as measured by a 5-point Likert scale (Strongly

Disagree = 1 to Strongly Agree = 5). All seven statements yielded mean scores above the criterion mean of 3.0, ranging from 3.95 to 4.22, with an overall grand mean of 4.07. These results indicate general agreement among respondents that the road improvement produced positive socio-economic effects along the corridor. The effect on rental values received the highest rating (4.22), while the effect on the corridor's commercial image/status received the lowest (3.95), though both remained within the "Agreed" range.

Rental value (Mean = 4.22): This statement received the highest mean score, indicating the strongest consensus among respondents. A substantial majority (150 out of 181, or 82.9%) agreed or strongly agreed that the road improvement increased rental values of commercial properties. This outcome is consistent with real estate economics theory, which posits that improved accessibility directly enhances land and property values through increased demand, a phenomenon known as the "accessibility premium."

Market/resale value (Mean = 4.12): Respondents strongly agreed that the road improvement enhanced the resale or market value of properties. This outcome reflects the capitalization effect of infrastructure investment, whereby improved road conditions are incorporated into the capital value of adjoining properties, increasing their attractiveness to prospective buyers and investors.

Customer patronage (Mean = 4.10): A high mean score here suggests that improved road access translated into higher footfall and vehicular traffic, directly benefiting business turnover. This is consistent with the "before and after" vacancy data previously presented, where reduced vacancy rates after the road improvement (82.9%) corroborate increased commercial viability driven by patronage.

Attraction of new businesses (Mean = 4.08): Respondents agreed that the corridor attracted new categories of businesses following the improvement, indicating diversification and densification of commercial activities. This outcome is typical when previously underutilized corridors become more accessible and commercially viable.

Reduced vacancy/void periods (Mean = 4.05): This finding reinforces the earlier vacancy rate comparison (Table 1 versus Table 2), providing convergent validity between the two data sets. Both sources independently indicate that the road

improvement reduced the duration for which commercial spaces remained unoccupied.

Employment opportunities (Mean = 3.98): Although still within the "Agreed" range, this indicator had a comparatively lower mean score. This suggests that while respondents perceived some positive employment effects, likely resulting from new businesses and expanded commercial activity, the magnitude of this effect was less pronounced or less directly experienced compared to property-value-related benefits.

Commercial image/status (Mean = 3.95): This statement recorded the lowest mean score, though it remained above the criterion mean. This result may indicate that while stakeholders recognize tangible economic benefits such as increased rent, value, and patronage, the intangible perception of the corridor's overall commercial image or status requires a longer period to shift. Achieving a fully matured commercial image may necessitate sustained improvement; complementary infrastructure such as street lighting, drainage, and aesthetics; or continued private investment.

With a grand mean of 4.07, which is well above the 3.0 criterion, the data provides strong evidence that the Ada-George Road improvement generated significant positive socio-economic effects for businesses and property stakeholders along the corridor. The consistency across all seven indicators, including values, patronage, business attraction, vacancy reduction, employment, and image, suggests a broad-based multiplier effect of road infrastructure investment on local commercial real estate performance, rather than an isolated or narrow benefit. This finding is consistent with, and reinforces, the earlier vacancy rate analysis (Tables 1–3), thereby strengthening the overall validity of the study's conclusion that road accessibility is a key driver of commercial property performance along Ada-George Road.

5.4 Changes in Rental Values of Commercial Properties Along the Corridor Attributable to the Road Improvement

Table 5 presents the collected and analyzed trends in rental and land values before and after the construction of the arterial road along Ada-George Road. The table summarizes the findings regarding the influence of arterial road construction on commercial property values.

Table 5: Rental Trends Before and After the Road Construction/Dualization

Property Type	Before (2017–2020)	After (2025–2026)	Approx. Increase	% Increase
Single shop (annual rent)	₦84,000 – ₦120,000 p.a.	₦180,000 – ₦360,000 p.a.	₦96k – ₦240k	114 – 200%
Office space (annual rent)	₦200,000 – ₦400,000 p.a.	₦800,000 – ₦1,200,000 p.a.	₦600k – ₦800k	200 – 300%

Purpose-built plaza/office (₦/m ² /year)	₦10,000 – ₦12,000/m ²	₦35,000 – ₦45,000/m ²	₦25k – ₦33k	250 – 275%
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Source: Field Survey/Market Assessment, 2026.

Table 5 presents a comparison of mean land and rental values for commercial properties along Ada-George Road before and after the road's construction and dualization (2017–2020 versus 2025–2026). Across all three property categories—single shops, office space, and purpose-built plaza or office space—values increased substantially. Annual rent for a single shop increased from ₦84,000–₦120,000 to ₦180,000–₦360,000, representing a rise of 114–200%. Office space rental increased from ₦200,000–₦400,000 to ₦800,000–₦1,200,000 per annum, an increase of approximately 200–300%. Purpose-built plaza or office space increased from ₦10,000–₦12,000 per m² to ₦35,000–₦45,000 per m², reflecting a rise of roughly 250–275%.

Single shop (annual rent): Rental values for single shops increased sharply (114–200%), more than doubling in most cases. This substantial increase indicates that landlords repriced their properties upward almost immediately following the road improvement, likely in response to increased demand from businesses seeking to benefit from enhanced visibility, accessibility, and customer flow along the corridor. This pattern aligns with earlier Likert-scale findings, where “increased rental value” recorded the highest mean score (4.22) among perceived socio-economic effects. The quantitative rent data thus substantiates these perceptions.

Office space: Office rents exhibited the largest percentage increase (200–300%), indicating significant repricing across the corridor. This trend may reflect a segmented market, in which premium office spaces near key junctions or intersections command higher rent increases than those located farther from major nodes. Alternatively, it may indicate a genuine expansion in office-based business activity attracted to the corridor following the infrastructure improvement.

Purpose-built plaza or office space: The increase from ₦10,000–₦12,000 per m² to ₦35,000–₦45,000 per m² (250–275% increase) reflects growing investor confidence in developing modern, purpose-built commercial structures along the corridor. This response is typical when improved infrastructure reduces investment risk and encourages formal real estate development, rather than informal or ad hoc commercial activity.

Overall pattern: Across all categories, percentage increases consistently exceeded 100%, representing a doubling or tripling of value throughout the corridor. This magnitude of appreciation provides strong quantitative confirmation of the qualitative and perceptual findings from the earlier Likert-scale analysis, in which stakeholders rated increased rental and market value as the most significant perceived effects of the road improvement (mean scores of 4.22 and 4.12, respectively). The alignment between perception and

measurable market outcomes strengthens the overall reliability of the study's findings.

The rental and land value data offer strong empirical evidence that the Ada-George Road improvement served as a significant driver of commercial property value appreciation. This outcome is consistent with established urban land economics theory, such as the accessibility-value relationship and hedonic pricing principles, which posit that improved transport infrastructure leads to higher land and property values in adjacent areas. This trend is further shown in figure 1 below:

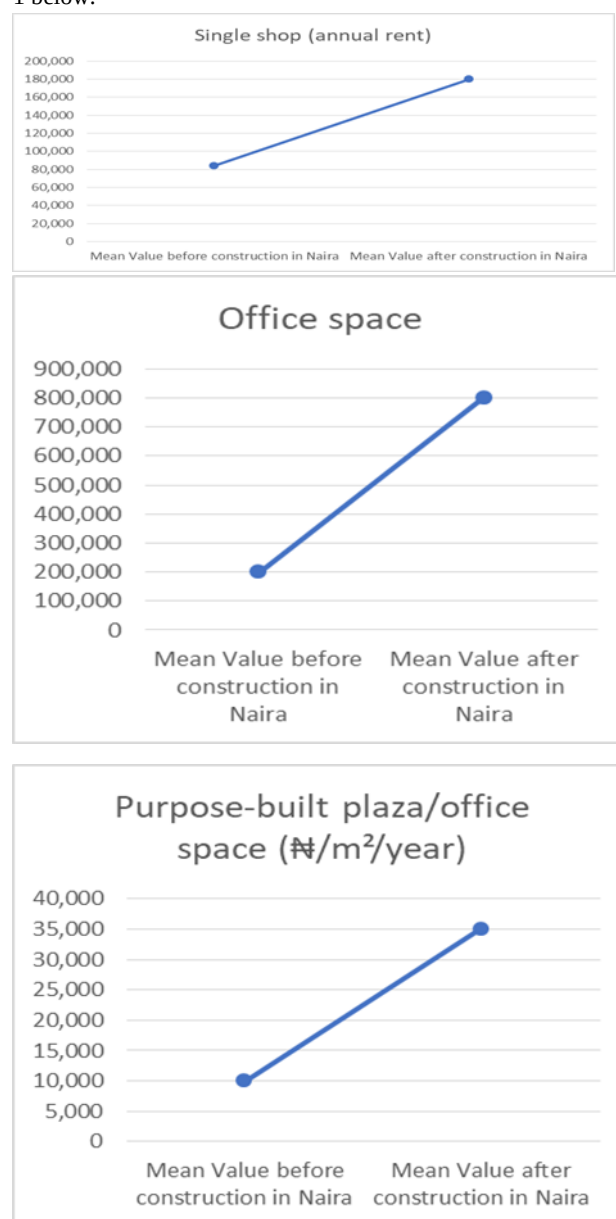


Figure 1: Rental Trends Before and After the Road Construction/Dualization

6.0 Discussion of Findings

This study examined changes in occupancy and vacancy rates of commercial properties along Ada-George Road, Port Harcourt, as well as the broader socio-economic effects of the road's improvement on businesses and property stakeholders. The findings, which encompass vacancy trends, perceived socio-economic effects, and rental and land value data, are discussed in relation to existing theoretical and empirical literature on road infrastructure and property performance.

Comparative vacancy data (Tables 1–3) indicate a shift in respondent perceptions before and after the road improvement. The proportion of respondents reporting high vacancy increased from 76.2% before the intervention to 82.9% after, while those who disagreed declined from 18.8% to 6.1%. This pattern aligns with findings from the socio-economic effects table, where respondents agreed (mean = 4.05) that the road improvement reduced vacancy and void periods for commercial properties. Collectively, these data suggest that commercial spaces along the corridor experienced faster turnover and longer occupancy following improved accessibility. The increase in the “not sure” category (from 5.0% to 11.0%) likely reflects respondents who are newer entrants to the corridor and unable to compare conditions across both periods, a common limitation in retrospective, perception-based survey data.

The Likert-scale results, particularly the strong agreement that the road improvement increased rental value (4.22) and market/resale value (4.12), are consistent with classical location theory. Drawing on von Thünen's (1826) foundational land-rent framework, recent Nigerian scholarship on peri-urban Ibadan demonstrates that land value decreases with distance from the central business district, but improvements in transportation infrastructure, such as new roads, can mitigate this effect by reducing the effective distance to the city centre. This theoretical perspective explains why stakeholders along Ada-George Road most strongly associated the road improvement with rising rental and resale values, rather than with outcomes such as commercial image or employment, which typically respond more gradually to infrastructure changes.

This finding is further supported by research on land value formation in Greater Port Harcourt City, which observes that properties accessible via a motorable road network command higher rental values due to enhanced accessibility, as land is immobile and tied to a specific location (Adiele & Kakulu, 2022). Since commercial land cannot relocate to seek improved access, any enhancement to the serving road is directly capitalized into the land's value, a pattern consistent with the significant appreciation recorded in this study's land value data.

The magnitude of value appreciation observed in this study (167–300% across property types) is substantial but aligns with precedents in the Nigerian literature. A Lagos-based study of properties along arterial roads in Ojo Local Government Area found that properties within 100 metres of arterial roads achieved rental values approximately 20%

higher than those located farther away, with well-connected roads associated with a 15–25% increase in sales value (Abidola et al., 2025). Although that study assessed a cross-sectional proximity effect rather than a before-and-after change, its findings corroborate the general trend identified here: proximity to and quality of road infrastructure are positively associated with higher property values. A broader comparative review of Ghana and Nigeria similarly concludes that road infrastructure development generally exerts a positive impact on property values, as improved connectivity enhances accessibility, stimulates economic activity, and increases the desirability of real estate in both urban and suburban areas (Alexander & Okpakam, 2024). However, the same review cautions that increased noise levels and traffic congestion resulting from road improvements can, in some cases, reduce residential desirability. This caveat is more relevant to residential than commercial corridors, but it is important to note as a boundary condition of the accessibility-value relationship.

A key strength of this study is the convergence of its four data sets. The vacancy data indicate increased property occupancy; the Likert data show stakeholders attributing this trend, as well as rising values, directly to the road improvement; and the rental and land value data independently confirm a sharp increase in values over the same period. This triangulation, where perceptions align with measurable market outcomes, strengthens the internal validity of the central argument: improved road infrastructure exerts a measurable, positive, and multi-dimensional effect on commercial property performance, including occupancy, rental value, capital value, and business vitality. Although the effects on intangible outcomes such as corridor image and employment were comparatively modest, they remained positive, suggesting that the full socio-economic benefits of the road improvement may continue to accrue over a longer time horizon.

7.0 Conclusion

The research analyzed changes in occupancy and vacancy rates, as well as the broader socio-economic impacts of the Ada-George Road improvement (construction and dualization) on commercial properties and stakeholders in Port Harcourt. The findings indicate that the road improvement has exerted a significant and positive influence on the performance of commercial real estate along the corridor. The analysis demonstrated that vacancy rates for commercial properties declined after the road improvement, while occupancy rates increased, as evidenced by comparative vacancy data and stakeholders' reports of shorter void periods. Stakeholders also reported, with strong consensus, that the road improvement led to higher rental and market/resale values, increased customer patronage, the attraction of new business categories to the corridor, and modest gains in employment and the overall commercial image of the area. These perceptions were corroborated by market data, which revealed that rental and land values along the corridor more than doubled, and in some property categories nearly tripled, between the pre-improvement period (2017–2020) and the post-improvement period (2025–2026).

The convergence of vacancy trends, stakeholder perceptions, and quantitative rental and land value data provides strong and consistent evidence that road infrastructure improvement is a critical driver of commercial property performance. The results confirm that investment in transport infrastructure not only enhances mobility but also generates substantial spillover benefits for adjacent commercial real estate, increasing value, occupancy, and overall economic vitality. These findings highlight the strategic importance of road infrastructure development as a mechanism for stimulating commercial property markets and promoting local economic growth in urban corridors such as Ada-George Road. In summary, the Ada-George Road improvement project has substantially transformed the corridor into a more commercially viable and economically active area, benefiting property owners, business operators, and the broader Port Harcourt property market.

Recommendations

Drawing from the study's findings and conclusions, the following recommendations are proposed:

- I. Sustained Investment in Road Infrastructure: Government and relevant urban development agencies should prioritize ongoing maintenance and enhancement of arterial roads such as Ada-George Road, due to the demonstrated positive spillover effects on commercial property values, occupancy rates, and local economic activity.
- II. Extension of Similar Improvements to Other Corridors: In light of the significant appreciation in rental and land values observed along Ada-George Road, similar road improvement and dualization projects should be implemented in other commercial corridors within Port Harcourt that exhibit high vacancy rates or underperformance, in order to stimulate comparable economic revitalization.
- III. Regulation of Rent Escalation: In response to the substantial rental increases (114–300%) recorded across property types, relevant regulatory bodies, such as state housing and real estate agencies, should monitor rent adjustment practices along improved corridors to prevent excessive or exploitative rent escalation that may displace small businesses and long-standing tenants.
- IV. Support for Local and Existing Businesses: Property owners and local authorities should implement measures such as phased rent reviews and business support incentives to help existing and long-standing businesses along the corridor adapt to rising rents. This approach will help ensure that the benefits of road improvements are broadly distributed and do not result in the displacement of established occupants.
- V. Encouragement of Purpose-Built Commercial Development: In view of the strong appreciation in purpose-built plaza and office space values, private investors and developers should be incentivized to construct additional formal, purpose-built commercial structures along improved corridors to meet increasing demand.
- VI. Further Research: Subsequent studies should monitor occupancy, rental, and value trends over an extended period to determine whether the observed positive effects are sustained. Similar analyses should also be conducted on other improved corridors in Port Harcourt for comparative evaluation.

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